REMARKS

Claims 51 and 54 have been amended. New claims 63-67 have been added. No new matter has been added by way of these amendments. Claims 19, 44, 56, and 57 have been previously canceled. Thus, claims 1-18, 20-43, 45-55, and 58-67 are pending in the application.

Applicants thank the Examiner for indicating that claims 17, 18, 20, 22, 42, 43, 45, and 47 are directed to allowable subject matter. However, Applicants have not restated any of these claims in independent form because Applicants believe claim 1, from which claims 17, 18, 20, 22 depend, and claim 26, from which claims 42, 43, 45, and 47 depend, are allowable, as explained below. Applicants have added, as discussed further below, new claims 63-67 based on subject matter previously identified as allowable.

Amendments to the Specification

Applicants have amended the Specification with the text of originally filed claim 51. No new matter has been added by way of this amendment.

Claim Rejections under 35 U.S.C. § 112

The Examiner rejected claims 51-55 as failing to comply with the written description requirement under 35 U.S.C. § 112, first paragraph. As an initial matter, Applicants respectfully note that these claims were amended, in an attempt to comply with a suggestion received from a previous Examiner, to recite "a computer-readable medium." See, Office Action dated July 10, 2007, p. 2 and subsequent Amendment dated November 8, 2007, pp. 12 and 15.

Applicants respectfully disagree that claim 51 as currently amended, and its dependents, fail to comply with the written description requirement. First, Applicants' Specification describes a memory loaded with a software code:

> Another embodiment of the invention also regards the corresponding system, as well as the corresponding computer product, which is directly loadable into the internal memory of a digital processor and contains portions of software code that are able to implement the process when said computer product is run on a numeric processor. Applicants' Specification, p. 3, lines 21-25, emphasis added.

As is well known, the described "internal memory of a digital processor" is a type of computer-readable memory medium and the described "portions of software code" include instructions that cause a processor to perform operations, as recited by claim 51 in its current form.

Furthermore, as noted above, Applicants have amended the specification to incorporate the language of claim 51, as originally filed. Thus, the Specification now includes at least written description support for a "machine-readable medium having instructions." A computer is of course a type of machine. A person skilled in the art of signal processing computing systems, upon reading the above-quoted passage describing a memory of a digital processor in conjunction with the original text of claim 51, would understand that the Applicants were in possession of a "computer-readable memory medium," as recited by claim 51 in its current form.

Thus, Applicants respectfully request that the Examiner withdraw these rejections.

Claim Rejections under 35 U.S.C. §§ 102 and 103

The Examiner rejected claims 1, 2, 9, 10, 15, 23, 24, 26, 27, 34, 35, 40, 48, 49, 51, 54, 55, 58, 59, 60, and 62 under 35 U.S.C. § 103(a) as being unpatentable over Aravind (U.S. Patent No. 5,214,507) in further view of Balasubramanian (article entitled "Sequential Scalar Quantization of Vectors: An Analysis") and further in view of Maeda (U.S. Patent No. 5,341,441). Claims 3-8, 13-14, 21, 28-33, 38-39, 46, and 53 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Aravind, Balasubramanian and Maeda and further in view of Cho (U.S. Patent No. 6,463,100). Claims 11-12, 36-37, and 61 were rejected under 35 U.S.C. § 103(a) as being unpatentable Aravind, Balasubramanian and Maeda and further in view of Cho and Lee (U.S. Patent No. 5,731,836).

Applicants respectfully traverse these rejections, as further described below.

Applicants' independent claims 1, 26, 51, and 58 each recite aspects no nowhere taught, suggested, or motivated by the cited references, alone or in any motivated combination. In particular, independent claim 1 recites, "wherein a same said quantization step is used for said scalar quantizer applied to each pixel within a block." Independent claims 26, 51, and 58 include similar language.

The Examiner asserts that Aravind describes the use of a same quantization step for a scalar quantizer applied to each pixel within a block. Office Action dated February 4, 2009 (hereinafter "Office Action"), p. 2, 3rd paragraph, citing Aravind column 4, lines 45-53 (hereinafter in col#:line# format, *e.g.*, 4:45-53); *see also*, p. 4, 2nd paragraph. The cited passage describes determining one quantization parameter, q_p, for each macroblock. Aravind, 4:52-53. Applicants respectfully disagree that Aravind's use of one quantization parameter for each macroblock teaches, suggests, or motivates, "a same said quantization step is used for said scalar quantizer applied to each pixel within a block."

Quite simply, Aravind's quantization parameter is not the same thing as the recited "quantization step." In particular, Aravind's quantization parameter is used as an index into a matrix of quantizer step sizes. Aravind, 4:11-21. The actual quantizer step size used by Aravind is a product of the quantization parameter and an element of the matrix of quantizer step sizes:

> The *actual quantizer step size* to be employed for quantizing each coefficient of signal DCTERR is developed by multiplying the value of q_p [the quantization parameter] by a respective element of the base quantizer step size matrix.

Aravind, 4:17-21, emphasis added.

Given that Aravind explicitly discusses determining a quantizer step size, Applicants fail to see how Aravind's quantization parameter can be equated with the recited "quantization step." Thus, Aravind's quantization parameter does not teach, suggest, or motivate, the recited "quantization step."

Furthermore, Aravind's quantization step size does not teach, suggest, or motivate the recited "quantization step." In particular, Applicants' claimed "quantization step" is used directly to quantize <u>each</u> pixel within a block. For example, for a determined quantization step Q, "the intensity of <u>each pixel of the block</u> p_i is quantized as follows: $p_{iQ} = \text{round}(p_i/Q)$." Applicants' Specification, p. 11, lines 27-28. Aravind, on the other hand, appears to use a different quantization step size, determined as a product of the quantization parameter and a respective element of the base quantizer step size matrix (as discussed above), for each coefficient in the block. Thus, Aravind's quantizer step size does not teach "<u>a same said quantization step</u> ... applied to each pixel within a block."

Moreover, Aravind's quantization parameter and corresponding quantizer step size matrix teach way from "a same said quantization step ... applied to each pixel within a block," as recited by the claims. In particular, Aravind's quantizer step size matrix is "arranged such that one base step size corresponds to, and will be employed for quantizing, one of the transformed coefficients of each subblock." Aravind, 4:6-8, emphasis added. Thus, it appears that the primary reason to use Aravind's quantizer step size matrix is to support the use of different quantizer step sizes for different coefficients in a block. Thus, Aravind does not teach, suggest, or motivate "wherein a same said quantization step is used for said scalar quantizer applied to each pixel within a block," as recited by independent claim 1, or similar language recited by independent claims 26, 51, and 58.

The Examiner has not cited any of the other references for, nor do they appear to describe, the above-discussed claim aspects. Thus, Aravind, Balasubramanian , Maeda, Cho and Lee, taken alone or in any motivated combination, do not teach, suggest, or motivate "wherein a same said quantization step is used for said scalar quantizer applied to each pixel within a block," or similar language recited by independent claims 1, 26, 51, and 58.

New Claims 63-67

Applicants have added new claims 63-67. New independent claim 63 combines the features of claim 1 and its dependent claim 20, as both presented in an Amendment filed November 8, 2007. In an Office Action responsive to the Amendment filed on November 8, 2007, the Examiner indicated that claim 20 was directed to allowable subject matter. Office Action dated January 25, 2008, p. 9 (indicating that claim 20 includes allowable subject matter). Furthermore, all subsequent Office Actions have also indicated that claim 20 is directed to allowable subject matter. Office Action dated May 29, 2008, p. 12; Office Action dated February 4, 2009, p. 13. Thus, Applicants believe that claim 63 is allowable in view of the cited references.

In addition, new claims 64-67 depend on claim 63 and are similar to claims 8, 11, 13, and 15, respectively. New claims 64-67 are believed to be allowable at least by virtue of their dependencies.

Conclusion

For at least the forgoing reasons, independent claims 1, 26, 51, and 58 are allowable in view of the cited references. In addition, the dependent claims are believed to be allowable at least by virtue of their dependencies.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are believed to be allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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